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|--|-------------|----------------------|--------------------------------|------------------|
| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.            | CONFIRMATION NO. |
| 10/830,155   | 04/22/2004  | Alastair Leeley      | DS04-002                       | 8124             |
| 7590<br>STEPHEN B. ACKERMAN<br>28 DAVIS AVENUE<br>POUGHKEEPSIE, NY 12603 |             |                      | EXAMINER<br>LESPERANCE, JEAN E |                  |
|  |             |                      | ART UNIT                       | PAPER NUMBER     |
|  |             |                      | 2629                           |                  |
| SHORTENED STATUTORY PERIOD OF RESPONSE                                   |             | MAIL DATE            | DELIVERY MODE                  |                  |
| 3 MONTHS   |             | 04/03/2007           | PAPER                          |                  |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/830,155             | LEELEY ET AL.       |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Jean E. Lesperance     | 2629                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 April 2004 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/18/06, 5/26/04</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

1. The application filed April 22, 2004 is presented for examination and claims 1-42 are pending.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 9-11, 17-22, 27-29, and 35-37 are rejected under 35 U.S.C. 102(b) as being unpatentable over US Patent No. 5,512,915 by Leroux.

Regarding claim 1, Leroux teaches a Multi Line Addressing (MLA) Liquid Crystal Display (LCD) system (a circuit for the selection of a matrix screen having two parts 10, 12, which are independent, but contiguous so as to ensure the continuity of the rows and the columns. The screen can be of the microdot fluorescent or liquid crystal type (column 4, lines 62-67) comprising:

a display unit (a matrix screen, upper part Fig.2 (10) and lower part, Fig.2 (12));  
and

a display controller device (The selection circuit comprises two registers 26, 28 having N stages respectively supplied by data signals DLI, DLP relating to the uneven and even rows to be selected and supplied by a not shown control circuit (column 5,

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lines 19-23)), wherein the lines for each common sub-group between said display unit and said display controller device are interlaced from top to bottom of the display unit in a way that a first common sub-group (1, 3, and 5, ... N-1) is driven from a first side of the display controller device, a second common sub-group (2, 4, 6,.....N) is driven from the opposite to first side of the display controller device, a third sub-group (N+1,.....2N-1) is driven from the first side again, a fourth common sub-group (N+2,.....2N) is driven from said opposite side again, and so on until the bottom of the display unit is reached. The control circuit not shown represent the display controller device and (uneven lines 1, 3, 5,....N-1 and even lines 2, 4, 6,.....N) represent the multiple line addressing.

Regarding claim 2, Leroux teaches MLA common sub-group comprises any number of lines (uneven lines 1, 3, 5,....N-1 and even lines 2, 4, 6,.....N). See Fig.2.

Regarding claim 3, Leroux teaches MLA common sub-group comprises three lines (1, 3, 5 uneven line for the first sub-group). See Fig.2.

Regarding claim 9, Leroux teaches a Multi Line Addressing (MLA) Liquid Crystal Display (LCD) system (a circuit for the selection of a matrix screen having two parts 10, 12, which are independent, but contiguous so as to ensure the continuity of the rows and the columns. The screen can be of the microdot fluorescent or liquid crystal type (column 4, lines 62-67) comprising:

a display unit (a matrix screen, upper part Fig.2 (10) and lower part, Fig.2 (12));  
and

a display controller device (The selection circuit comprises two registers 26, 28 having N stages respectively supplied by data signals DLI, DLP relating to the uneven

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and even rows to be selected and supplied by a not shown control circuit (column 5, lines 19-23)), wherein a number of MLA common sub-groups are bundled into MLA common groups and the lines for each common group between said display unit and said display controller device are interlaced from top to bottom of the display unit in a way that a first MLA common group (1, 3, and 5, ... N-1) is driven from a first side of the display controller device, a second common group (2, 4, 6, ..., N) is driven from the opposite to first side of the display controller device, a third common group (N+1, ..., 2N-1) is driven from the first side again, a fourth common group (N+2, ..., 2N) is driven from said opposite side again, and so on until the bottom of the display unit is reached. The control circuit not shown represent the display controller device and (uneven lines 1, 3, 5, ..., N-1 and even lines 2, 4, 6, ..., N) represent the multiple line addressing.

Regarding claim 10, Leroux teaches MLA common sub-group comprises any number of lines (uneven lines 1, 3, 5, ..., N-1 and even lines 2, 4, 6, ..., N). See Fig.2.

Regarding claim 11, Leroux teaches MLA common sub-group comprises three lines (1, 3, 5 uneven line for the first sub-group). See Fig.2.

Regarding claim 17, Leroux teaches MLA common groups comprise two MLA common sub-groups (1, 3, 5 uneven line for the first sub-group) wherein if N is equal to 1 in the first sub-group, the sub-group will be two lines, in the second sub-group, if N is equal to 0, the second sub-group will be two lines. See Fig.2.

Regarding claim 18, Leroux teaches MLA common groups comprise three MLA common sub-groups (1, 3, 5 uneven line for the first sub-group). See Fig.2.

Regarding claim 19, Leroux teaches a Liquid Crystal Display (LCD) system (a circuit for the selection of a matrix screen having two parts 10, 12, which are independent, but contiguous so as to ensure the continuity of the rows and the columns. The screen can be of the microdot fluorescent or liquid crystal type (column 4, lines 62-67) comprising:

a display unit (a matrix screen, upper part Fig.2 (10) and lower part, Fig.2 (12));  
and

a display controller device (The selection circuit comprises two registers 26, 28 having N stages respectively supplied by data signals DLI, DLP relating to the uneven and even rows to be selected and supplied by a not shown control circuit (column 5, lines 19-23)), wherein a number of common signal lines are bundled into common signal groups and the lines for each common signal group between said display unit and said display controller device are interlaced from top to bottom of the display unit in a way that a first common signal group (1, 3, and 5, ... N-1) is driven from a first side of the display controller device, a second common signal group (2, 4, 6, ..., N) is driven from the opposite to first side of the display controller device, a third common signal group (N+1, ..., 2N-1) is driven from the first side again, a fourth common signal group (N+2, ..., 2N) is driven from said opposite side again, and so on until the bottom of the display unit is reached. The control circuit not shown represent the display controller device and (uneven lines 1, 3, 5, ..., N-1 and even lines 2, 4, 6, ..., N) represent the multiple line addressing.

Regarding claim 20, Leroux teaches MLA common sub-group comprises any number of lines (uneven lines 1, 3, 5,...N-1 and even lines 2, 4, 6,...N). See Fig.2.

Regarding claims 21 and 22, Leroux teaches MLA common sub-group comprises two lines (1, 3, 5 uneven line for the first sub-group) wherein if N is equal to 1 in the first sub-group, the sub-group will be two lines, in the second sub-group, if N is equal to 0, the second sub-group will be two lines. See Fig.2.

Regarding claim 27, Leroux teaches providing an MLA LCD display unit (a matrix screen, upper part Fig.2 (10) and lower part, Fig.2 (12)) and a MLA LCD display controller device (The selection circuit comprises two registers 26, 28 having N stages respectively supplied by data signals DLI, DLP relating to the uneven and even rows to be selected and supplied by a not shown control circuit (column 5, lines 19-23));

define number of lines per MLA common sub-group (a matrix screen, upper part Fig.2 (10) and lower part, Fig.2 (12)) which include different groups of row lines; and

interlace lines of MLA common sub-groups alternately from both sides of the display control device (the matching means Fig.2 (34 and 38) wherein the lines are interlaced with each other) to the correspondent sides of the display unit in a way that the uppermost MLA sub-group (1, 3, and 5, ... N-1) is driven from a first side of the MLA display control device, the second uppermost MLA sub-group (2, 4, 6,...N) is driven from the side opposite to said first side, the third uppermost MLA sub-group (N+1,...2N-1) is driven from said first side again and so on. The control circuit not shown represent the display controller device and (uneven lines 1, 3, 5,...N-1 and even lines 2, 4, 6,...N) represent the multiple line addressing.

Regarding claim 28, Leroux teaches MLA common sub-group comprises any number of lines (uneven lines 1, 3, 5,...N-1 and even lines 2, 4, 6,.....N). See Fig.2.

Regarding claim 29, Leroux teaches MLA common sub-group comprises three lines (1, 3, 5 uneven line for the first sub-group). See Fig.2.

Regarding claim 35, Leroux teaches providing an MLA LCD display unit (a matrix screen, upper part Fig.2 (10) and lower part, Fig.2 (12)) and a MLA LCD display controller device (The selection circuit comprises two registers 26, 28 having N stages respectively supplied by data signals DLI, DLP relating to the uneven and even rows to be selected and supplied by a not shown control circuit (column 5, lines 19-23));

define number of lines per MLA common sub-group (a matrix screen, upper part Fig.2 (10) and lower part, Fig.2 (12)), which include different sub-groups of row lines;

define number of MLA common sub-groups per MLA common group (a matrix screen, upper part Fig.2 (10) and lower part, Fig.2 (12)), which include different sub-groups of row lines in the group of row lines between matching means (34 and 38) and the display parts (10 and 12); and

interlace lines of MLA common sub-groups alternately from both sides of the display control device (the matching means Fig.2 (34 and 38) wherein the lines are interlaced with each other) to the correspondent sides of the display unit in a way that the uppermost MLA sub-group (1, 3, and 5, ... N-1) is driven from a first side of the MLA display control device, the second uppermost MLA sub-group (2, 4, 6,.....N) is driven from the side opposite to said first side, the third uppermost MLA sub-group (N+1,.....2N-1) is driven from said first side again and so on. The control circuit not



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shown represent the display controller device and (uneven lines 1, 3, 5,...N-1 and even lines 2, 4, 6,...N) represent the multiple line addressing.

Regarding claim 36, Leroux teaches MLA common sub-group comprises any number of lines (uneven lines 1, 3, 5,...N-1 and even lines 2, 4, 6,...N). See Fig.2.

Regarding claim 37, Leroux teaches MLA common sub-group comprises three lines (1, 3, 5 uneven line for the first sub-group). See Fig.2.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 5, 12, 13, 23, 30, 31, 38, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,512,915 ("Leroux") in view of U. S. Patent No. 6,888,606 ("Hinata et al.").

Regarding claims 4, 5, 12, 13, 23, 30, 31, 38, and 39, Leroux teaches all the claimed limitations with the exception of providing an LCD display is having an active matrix and a passive matrix.

However, Hinata et al. teach the passive matrix type transfective color liquid crystal device is described by way of example; however, the present invention may also be applied to an active matrix type transfective color liquid crystal display having two-

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terminal type switching elements such as TFD's or three-terminal type switching elements such as TFT's (column 17, lines 20-26).

Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize the active and passive matrix as taught by Hinata et al. into the screen disclosed by Leroux because this would allow the wiring resistance to be decreased, and hence, the display quality can be maintained at a higher level (column 7, lines 16-18).

4. Claims 6-8, 14-16, 24-26, 32-34, and 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,512,915 ("Leroux") in view of U. S. Patent No. 6,888,606 ("Hinata et al.") and further in view of U. S. Patent No. 5,124,818 ("Conner et al.").

Regarding claims 6-8, 14-16, 24-26, 32-34, and 42-42, the combination of Leroux and Hinata et al. teaches all the claimed limitations with the exception of providing a Twisted Nematic (TN) LCD display, Super Twisted Nematic (STN) LCD display, and Double Super-Twisted Nematic (DSTN) LCD display.

However, Conner et al. teach the black panel 16 is a supertwisted nematic cell operated in conjunction with a retardation film 30 that tunes the cell for maximum contrast. In other embodiments, a double supertwisted nematic cell or even a twisted nematic cell may be used (column 13, lines 33-37) wherein the black panel is made of liquid crystal material (see column 8, lines 52-57).

Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize the panel as taught Conner et al. into the

modified screen disclosed by the combination of Leroux and Hinata et al. because this would provide a high resolution display that is produced by stacked cells with interlaced display rows and opposite twist senses (column 4, lines 66-68).

### **Conclusion**

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean Lesperance whose telephone number is (571) 272-7692. The examiner can normally be reached on from Monday to Friday between 10:00AM and 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on (571) 272-7691.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

(571) 273-8300 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Jean Lesperance

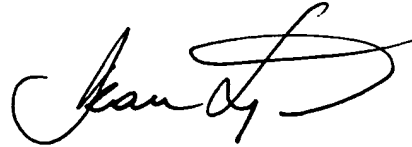
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Date 3/24/2007

A handwritten signature in black ink, appearing to read "Kean" followed by a stylized flourish.